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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 902,502	07 09 2001	Kenneth A. Goldberg	LBL-CIB-1572	5914

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EXAMINER

LABAZE, EDWYN

ART UNIT

PAPER NUMBER

2876

DATE MAILED: 05 30 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/902.502

Applicant(s)

GOLDBERG, KENNETH A

Examiner

EDWYN LABAZE

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

1. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-94a)
2. ☐ Information Disclosure Statement(s) (PTO-1449, Paper 1a/s)
3. ☐ Other

4. ☐ Interview Summary (PTO-413, Paper 1a/s)
5. ☐ Notice of Informal Patent Application (PTO-376)
6. ☐ Other

DETAILED ACTION

1. Receipt is acknowledged of amendments filed on 12/18/2002.
2. Claims 1-36 are presented for examination.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bokor et al. (U.S. 6,555,828) in view of Tomii et al. (U.S. 5,940,173)

Re claims 1, 7, 13, 18, 23, 29, and 35: Bokor et al. discloses method of apparatus for inspecting reflection masks for defects, which includes an extreme ultraviolet lithography or EUV light source (col.2, lines 55-67), wherein the EUV is a synchrotron (col.9, lines 17+), and a detector 20 (col.3, lines 2+), means for directing the EUV light to the mask (col.2, lines 5+ and col.8, lines 66+), further comprising an EUV light source positioned to direct a beam light (col.9, lines 23+) and analyzing the recorded reflections to determine the presence of defects (col.8, lines 65-67 and col.9, lines 1+). The examiner is broadly interpreted a mask blank as a piece of glass without a color filter used to reflect a light source.

Bokor et al. fails to teach a CCD camera.

Tomii et al. discloses method and apparatus for inspecting the quality of transparent

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an area of a mask blank using reflections of light from a light source impinging on the mask blank (col.11, lines 28+).

In view of the teachings of Tomii et al., it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ an a CCD camera into the teachings of Bokor et al. in order to record the reflected EUV from the mask blank. Furthermore, the use of the CCD camera would have been an improvement of the teaching of Bokor et al. by comparing pixel data related to the EUV image either to data corresponding of other portions of the image or to stored data from previous image. Moreover, such modification would have been an obvious extension as taught by Bokor et al., therefore an expedient.

Re claims 2, 8, 14, 19, 24, 30, and 36: Bokor et al. discloses and apparatus and method, wherein the EUV comprising a synchrotron (col.9, lines 17+).

Re claims 3, 9, 25, and 31: Bokor et al. teaches an apparatus and method, wherein means for imaging comprises a EUV detector 20 (col.3, lines 2+).

Re claims 4, 10, 15, 20, 26, 32, and 37: Bokor et al. discloses an apparatus and method, wherein the detector comprises a CCD camera array 4 (col.11, lines 28+).

Re claims 5, 11, 16, 21, 27, 33, and 38: Bokor et al. discloses and apparatus and method, wherein the EUV comprising a micro-channel plate (col.4, lines 32-62).

Re claims 6, 12, 17, 23, 28, 34, and 39: Bokor et al. teaches and apparatus and method, further comprising a pinhole aperture 46 positioned between the EUV source and the mask blank 10 (See Fig. # 1 of Bokor et al., and col.6, lines 25+).

Applicant's arguments with respect to claims 1-39 filed on 12/18/2002 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shafer et al. (U.S. 6,133,576) discloses broad-spectrum ultraviolet methods employing catadioptric imaging.

Felter et al. (U.S. 6,007,963) teaches method for extreme ultraviolet lithography.

Ruffner (U.S. 5,911,858) discloses method for high-precision multi-layered thin film deposition for deep extreme ultraviolet mirrors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDWYN LABAZE whose telephone number is (703) 305-5437. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (703) 305-3503. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

el
Edwyn Labaze

KARL J. FRECH
SENIOR EXAMINER